

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2019/2020

**EME3066 – CAD/CAM**  
(ME)

23 OCTOBER 2019  
9.00 am - 11.00 am  
(2 Hours)

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### INSTRUCTIONS TO STUDENT













1. This question paper consists of 5 pages including cover page with 4 Questions only.
2. Answer **ALL FOUR** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

**Question 1**

(a) **Table Q1(a)** shows the types of commonly used symbols according to ANSI for geometric tolerancing. Find their appropriate characteristics based on the symbols given.

(Note: Copy the roman letters in **Table Q1(a)** to your answer script together with your choice of answers)

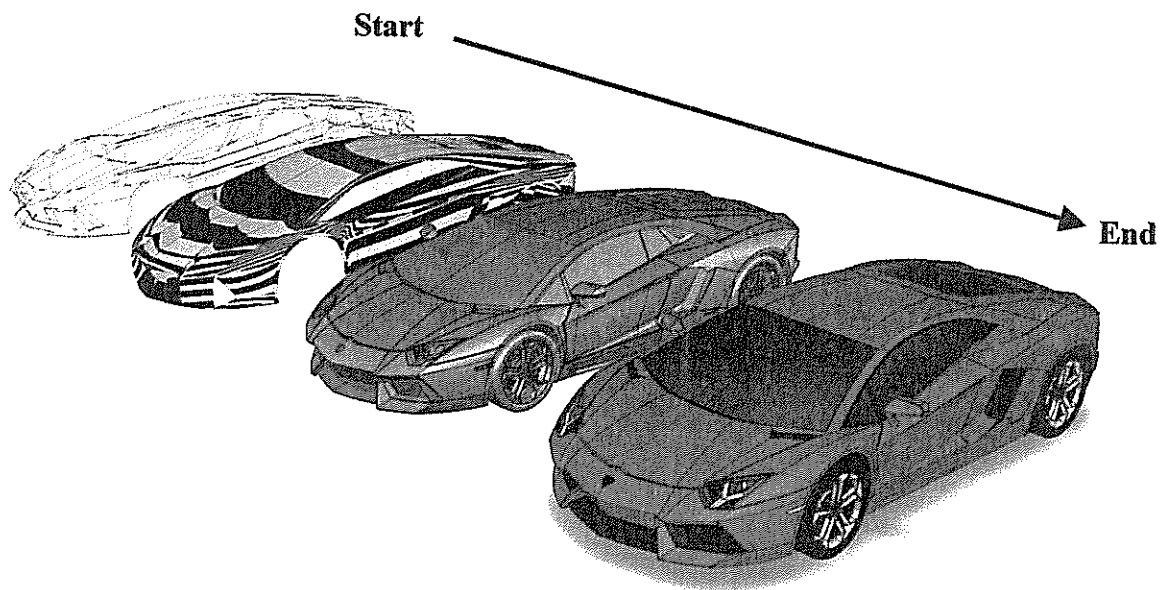
**[13 marks]****Table Q1(a)**

Type of Tolerance	Characteristic	Symbol
Form	i	—
	ii	
	iii	
	iv	
Profile	v	
	vi	
Orientation	vii	
	viii	
	ix	
Location	x	
	xi	
Runout	xii	
	xiii	

**Continued...**

(b) **Figure Q1(b)** shows a typical Modelling System of a vehicle using CAD. Illustrate the different stages involved in modeling the vehicle. For each stage you had provided, illustrate **ONE** advantage and disadvantage.

[12 Marks]



**Figure Q1(b)**

## Question 2

(a) Differentiate between '*pre-processing*', '*fabrication*' and '*post-processing*' in rapid prototyping process. Explain your answers briefly.

[9 marks]

(b) With the aid of a diagram, illustrate how integrating Rapid Prototyping Technologies can decrease cost and time in a typical manufacturing sector.

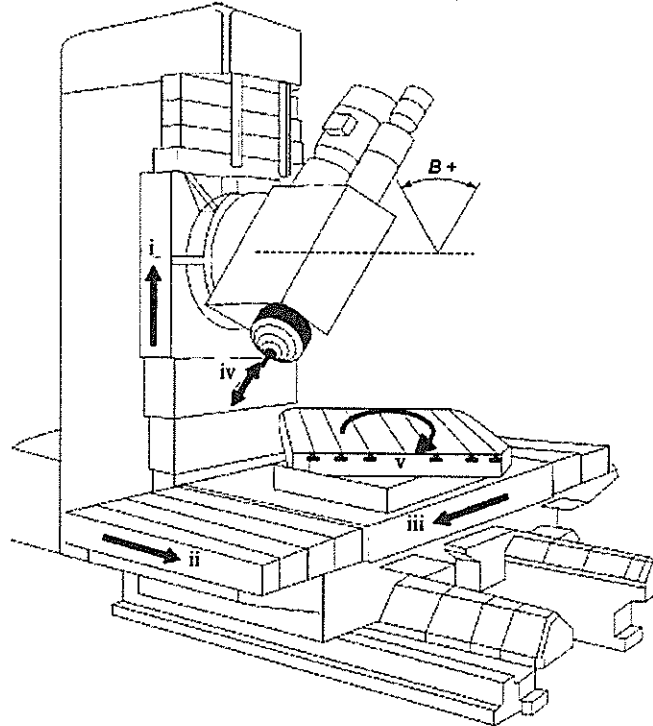
[16 marks]

Continued...

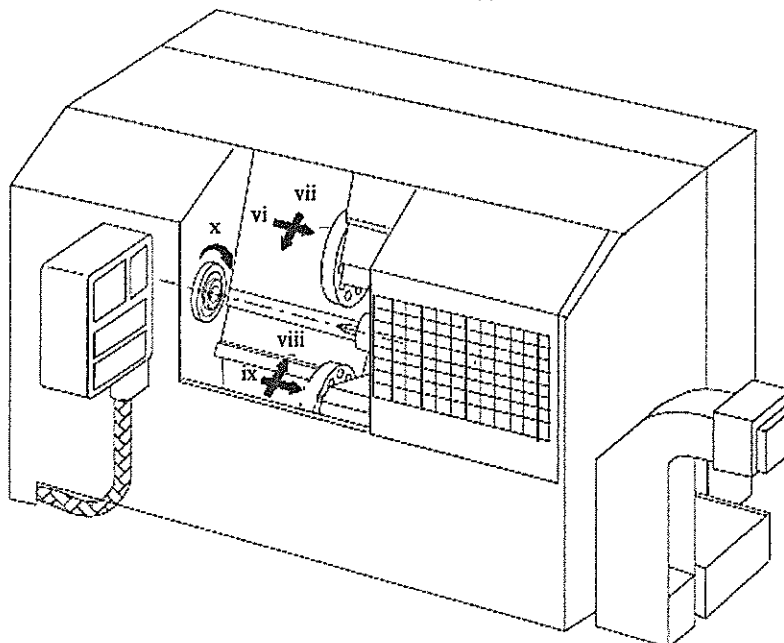
**Question 3**

(a) By analyzing **Figure Q3a(i)** and **Figure Q3a(ii)**, find the respective axes designation as per the ISO standard.

(Note: Clearly write the roman letters of the arrows; ex: i: , ii: , ....x: ; in your answer booklet and write the appropriate axes designation.) **[10 marks]**



**Figure Q3a(i)**



**Figure Q3a(ii)**

**Continued...**

(b) By means of a neat sketch, differentiate the **THREE** types of work-holding methods that are used in CNC machining centres.

*(Note: Provide their working principals based on your sketch provided)*

**[15 marks]**

#### **Question 4**

(a) What is '**Lead Time**'? By means of a neat diagram, illustrate how you can reduce '**Lead Time**' in the manufacturing of a product using concurrent engineering environment.

**[10 marks]**

(b) By means of a neat sketch, illustrate how tool monitoring and life systems works.

*(Note: Label your sketch accordingly and briefly explain it)*

**[15 marks]**

**End of paper**